

The Economics of Road Maintenance

An RAC Foundation view

Stephen Glaister
June 2013



The Royal Automobile Club Foundation for Motoring Ltd is a transport policy and research organisation which explores the economic, mobility, safety and environmental issues relating to roads and their users. The Foundation publishes independent and authoritative research with which it promotes informed debate and advocates policy in the interest of the responsible motorist.

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1. Introduction

It is time the English government took the condition of our roads seriously. The public hates potholes above almost any other defect in the public realm. There is a long-standing backlog of under-maintained local roads. Extreme weather is causing additional damage. Yet funding for both national and local road maintenance has fallen.



The RAC Foundation is concerned about the poor standards of highway maintenance, given its immense importance to motorists and other road users, the large backlog of work and the forecast of declining expenditure by highway authorities. At the very least, we ought to know the economic cost to the nation of not maintaining our roads properly, and the value of investing to do so. Unlike the Scottish government – who are ahead in this matter – the English government does not have a systematic way of measuring the extent to which poor road maintenance wastes economic value. If something is not accurately assessed then it cannot be adequately managed.

Research for the Scottish government, which inspired the RAC Foundation to commission the research reported in this document, confirms that under-maintaining roads is fundamentally short-sighted; it is a false economy. It will cost more than the pound saved today to put right tomorrow the consequential damage. This is what anybody who has to maintain their own home understands: letting the roof leak makes you miserable and costs you more in the long run. It is never a good idea.

The Highways Maintenance Efficiency Programme (HMEP) report *Prevention and a Better Cure: Potholes review* made a recommendation that: “To evaluate and justify the need for investment in maintenance of the local highway network, the Department for Transport [DfT] should work in conjunction with local highway authorities to develop advice on determining economic costs and benefits” (HMEP, 2012). This recommendation was accepted by the DfT when the potholes report was published, and we understand that they are in the process of appointing advisers to assist them in this work.

The RAC Foundation also welcomes the recommendation. Following discussions between ADEPT (Association of Directors of Environment, Economy, Planning and Transport) and the DfT, it was agreed that the Department's work would complement and build upon this research commissioned by the RAC Foundation. This study, which suggests a framework of analysis based on the available evidence, is a contribution that will now assist the DfT to deliver on their promise.

2. Public Dissatisfaction with Road Conditions

Evidence of strong public dissatisfaction with the standard of local road maintenance is to be found in several sources. The Audit Commission report on road maintenance quotes a 2008 survey asking what services local residents think "need improving". Astonishingly, number two from a long list was "road and pavement repairs", ahead of crime at number four and health services at number fourteen (Audit Commission, 2011).



The RAC Foundation found the same thing during the 2010 General Election campaign, when we asked people their highest transport priorities of an incoming government. Top at 58% was "condition of roads and pavements"; next at 46% was "curbing the cost of driving"; public transport fares came farther down the list; and bottom at 3% was "developing a new high speed railway" (RAC Foundation, 2010).

In 2012, the National Highways & Transport Survey (NHT Survey) found that 61% of residents in England were dissatisfied with the condition of local roads. Only 27% were satisfied with the condition of this asset, giving a net satisfaction rating of minus 34%, much worse than for the years that preceded the recent hard winters (NHT Survey, 2012).

In the 2013 *RAC Report on Motoring*, respondents were asked about the "issues that most concern motorists." Condition/maintenance of UK roads was

equal second in importance, after the cost of fuel for running a car (RAC, 2013).

You get the picture.

3. Evidence on Road Condition

To date, the Highways Agency's roads have been adequately maintained and are in reasonable condition according to the Institution of Civil Engineers (2010).



The Asphalt Industry Alliance (AIA) 2013 *ALARM Survey* identified that local authority roads require significantly more investment than is currently devoted to this activity. The *Survey* claimed that England and Wales are suffering from poor road conditions to an extent that far outweighs the maintenance spend. The current settlement from central to local government over the current four-year spending period amounts to just 1% of the network's worth. The AIA claimed that one in five of these roads is in poor condition, with less than five years of life remaining (AIA, 2013).

An extra £215 million over the next two years was announced in the 2012 Autumn Statement, but a one-off boost clearly only covers a modest proportion of what needs to be spent. It is estimated by the AIA that last year's extreme rainfall created an £338 million bill for damage, to be covered by a service already struggling with a cumulative backlog of more than £10 billion – the sum estimated by the AIA as needed to put England and Wales's road networks in reasonable order.

This report establishes a way to assess the economic value to the nation of bringing the road networks up to an adequate standard of maintenance.

Achieving the efficiencies envisaged in the HMEP requires a long-term plan as well as a commitment to expenditure over at least a five-year period. It is not impossible: the asset condition of the railways has benefitted immensely from just such a long-term plan supported by a five-year planning and funding cycle.

4. The Decline in Spending on National and Local Roads

The strategic road network

The Highways Agency, like local government, suffered a cut in its budgets in the Coalition Government's first Spending Review of autumn 2010.



Table 1: Highways Agency maintenance spending

Maintenance expenditure (£ million)	2011/12	2012/13	2013/14	2014/15
Capital	416	464	399	390
Programme resource	417	291	274	273
Total	833	755	673	663

Source: Highways Agency (2012; 2013)

The Highways Agency *Business Plan 2012–13* and *Business Plan 2013–14* showed that ongoing maintenance and renewals expenditure on the strategic road network will fall from £833 million in 2011/12 to £655 million in 2014/15 – a decline of nearly 30%. That cut will be further exacerbated by price inflation in the construction industry; however, the Highways Agency is expected to achieve up to 20% efficiency savings, according to the DfT's *Strategic Road Network*

Performance Specification 2013–15 (DfT, 2013). If delivered, this would only partially offset the reduction in expenditure on road maintenance activity.

Clearly there is a concern that the current broadly satisfactory state of the strategic road network is at risk.

Local roads

Of rather greater concern is the situation for roads maintained by local highway authorities: in general, the starting point for these roads is a rather worse asset condition than the strategic road network. The financial projections that relate to local road maintenance are shown in Table 2.

Table 2: 2010 Comprehensive spending review for local government

Expenditure (£ million)	Baseline 2010/11	2011/12	2012/13	2013/14	2014/15	Change (real)
Local government road maintenance – capital	871	806	779	750	707	
Local government transport – resource	473	378	401	413	420	-28%

Source: DfT (2010)

The settlement of approximately £3 billion capital and £1.6 billion resource over the four years assumes “significant scope for efficiencies, for example through combining purchasing power of local authorities to drive down prices”, although the scale of these is not revealed. The HMEP has presented assumptions about the efficiencies that should be achievable.

The actual resource expenditure on highway maintenance will in the end depend on the priority it gets in local authority budgets along with all other expenditure headings, because there is no obligation for this money (which is one part of a much wider single pot) to be spent on maintenance. The pressure on local government expenditure – which includes education and social care – means it is extremely challenging to keep road maintenance expenditure at the levels envisaged in these allocations. But even if it does stay in line with these allocations, it will still see a 28% real reduction between 2010/11 and 2014/15. These reductions are significantly greater than for the DfT’s budget as a whole.

It is encouraging to note that Brian Smith in his review of winter resilience for the RAC Foundation (Smith, 2013) reported that local authorities have managed to preserve their spending on winter resilience and intend to continue to do that. By the same token, protecting spending on that activity may further expose routine maintenance to even greater risk of cuts.

The TRL study for the RAC Foundation

The RAC Foundation and ADEPT commissioned the Transport Research Laboratory (TRL) in 2012 to explore the methods for identifying the economic costs of different aspects of poor maintenance in England and Wales, based on work already completed by them in Scotland.

The authors' previous work for Transport Scotland concluded (Parkman et al., 2012):

“There is an overall disbenefit to society of reducing road maintenance expenditure on the Scottish road network. The qualitative review of each criterion highlights the various impacts, almost all of which are negative. This supports the traditional view held by highway engineers that reductions in road maintenance lead to long-term disbenefits for developed road networks such as those in Scotland. The quantitative analyses, which have only addressed certain aspects of the qualitative analysis, further support the qualitative conclusions and show that for every £1 reduction in road maintenance, there is a cost of £1.50 to the wider economy. If figures were available to quantify aspects not currently included in the quantitative analyses, it is expected that these would only enhance the conclusion. For example: impacts of any increase in road closures due to unforeseen events; costs of delaying major repair work on significant structures leading to possible closures, weight restrictions or more extensive maintenance work; wider economic disbenefits such as reduced tourism or local economic activity.”

In relation to the English situation the authors pointed out that conditions are different so one cannot assume full analysis would come to the same conclusion (ibid). But given the generally higher intensity of use of English roads they see no reason to expect that the loss of economic value and other disadvantages would be less than they found in Scotland.

Their report on England also concluded that:

- inadequate investment in highway maintenance leads to poor road conditions and increased costs for both network users and managers;
- over the coming years cuts to local government finances will create strong pressures to reduce local road maintenance spending;
- increased user costs – mainly in higher vehicle operating expenses because of damage and lower speeds – far outweigh the savings from reduced or delayed maintenance;
- cutting back on road maintenance activity results in higher costs in the long run for local authorities and there are even larger costs for road users;
- many highway authorities are not in a position to predict confidently how changes to road maintenance budgets will impact on road condition and user costs; and

- in future it is important for the DfT to work with local authorities to estimate the impacts of changes in road maintenance levels, including currently unknown economic and social impacts (ibid).

This report is by no means the complete story. It is a starting point. More work is needed. The report recommended the following programme of work:

- to establish a carriageway condition projection model approach – a relatively simple, network-level model is suggested as the first step for an analysis of this type;
- summarise the current network condition for carriageways in the format required for the model – assumptions would need to be made for the significant parts of the network (i.e. C class and unclassified roads) for which data is likely to be unavailable;
- define funding scenarios and identify the impact of overall road maintenance budget reductions on carriageway maintenance spend;
- define road-user cost and vehicle operating-cost models using standard parameters (for example, from the official DfT source, WebTAG) and other assumptions;
- determine future network condition and road-user and vehicle operating costs associated with each funding scenario; and
- perform sensitivity analyses to test the range and robustness of results and assumptions (ibid).



5. Conclusion

The English road network – national and local – is one of the nation's largest and most important publicly held assets. The condition of the network is deteriorating, and not enough is being spent or planned to be spent to stop the deterioration and to address the backlog.



At the same time it is the No. 1 problem area for transport in the minds of motorists and other road users, as several different surveys all testify. There needs to be a proper assessment of the backlog and the economic benefits of planning to deal with it as a long-term, committed policy. Government should now deliver on its promise to implement the recommendations of the *Potholes review* (HMEP, 2012): in particular, to set up the analytical capability and economic methods to comprehend the costs and the benefits of addressing the maintenance deficit, and how best to plan and deliver the necessary programmes.

It is well beyond the resources or obligations of external research bodies such as ours to carry out such detailed analysis. But the report we now publish suggests there is a strong prima-facie case for government now to set about this task.



6. References

AIA (Asphalt Industry Alliance) (2013). *Annual Local Authority Maintenance Survey (ALARM) 2013*. Retrieved 8 May 2013 from www.asphaltindustryalliance.com/images/library/files/Alarm%20Survey%202013/ALARM_Survey_2013.pdf.

Audit Commission (2011). *Going the Distance: Achieving better value for money in road maintenance*. Retrieved 8 May 2013 from <http://archive.audit-commission.gov.uk/auditcommission/sitecollectiondocuments/Downloads/20110526goingthedistancePRESS.pdf>.

Bayliss, D. (2012). *Local Road Maintenance*. RAC Foundation. Retrieved 8 May 2013 from www.racfoundation.org/assets/rac_foundation/content/downloadables/local_road_maintenance-bayliss-nov2012.pdf.

DfT (Department for Transport) (2010). *Information from the Transport Spending Review 2010*. Retrieved 8 May 2013 from <https://www.gov.uk/government/news/transport-spending-review-2010>.

DfT (2013). *Strategic Road Network Performance Specification 2013–15*. Retrieved 8 May 2013 from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/185684/performance-specification-2013-15.pdf.

Highways Agency (2012). *Business Plan 2012–13*. Retrieved 8 May 2013 from http://assets.highways.gov.uk/about-us/corporate-documents-business-plans/S110461_Business_Plan_2012-13_Final.pdf.

Highways Agency (2013). *Business Plan 2013–14*. Retrieved 8 May 2013 from http://assets.highways.gov.uk/about-us/corporate-documents-business-plans/S120450_Highways_Agency_Business_Plan_2013-14.pdf.

HMEP (Highways Maintenance Efficiency Programme) (2012). *Prevention and a Better Cure: Potholes review*. Retrieved 8 May 2013 from <http://assets.dft.gov.uk/publications/pothole-review/pothole-review.pdf>.

Institution of Civil Engineers (2010). *The State of the Nation: Infrastructure 2010*. Retrieved 8 May 2013 from www.ice.org.uk/getattachment/c198a95f-69bd-4c46-8110-51b057ec20f1/State-of-the-Nation—Infrastructure-2010.aspx.

NHT Survey (National Highways & Transport Survey) (2012). *NHT Survey – Survey Results*. Retrieved 8 May 2013 from <http://nhtsurvey.econtrack.co.uk/Content.aspx?4812>.

Parkman, C., Abell, R., Bradbury, T. & Peeling, D. (2012). *Economic, Environmental and Social Impacts of Changes in Maintenance Spend on Roads in Scotland*. Transport Scotland. Retrieved 10 May 2013 from www.transportscotland.gov.uk/strategy-and-research/publications-and-consultations/j235740-00.htm.

RAC (2013). *RAC Report on Motoring*. Forthcoming.

RAC Foundation (2010). *Holes Over High Speed Rail*. Press release. Retrieved 8 May 2013 from www.racfoundation.org/media-centre/holes-over-high-speed-rail.

Smith, B. (2013). *Ploughing On: A review of highway resilience in Winter 2013*. RAC Foundation. Retrieved 8 May 2013 from www.racfoundation.org/assets/rac_foundation/content/downloadables/ploughing_on_winter_resilience_review_smith_may_2013.pdf.

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